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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,651	11/12/2003	Lewis B. Aronson	15436.186.2	7011

7590 04/25/2007
Fraser D. Roy
WORKMAN NYDEGGER
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, UT 84111

EXAMINER

CONNELLY CUSHWA, MICHELLE R

ART UNIT	PAPER NUMBER
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2874

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/706,651

Applicant(s)

ARONSON ET AL.

Examiner

Michelle R. Connelly-Cushwa

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 14-17, 19, 20, 22, 23 and 26-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20, 22, 23 and 26-28 is/are allowed.
- 6) ☒ Claim(s) 1-5, 14-17, 19 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 22, 2007 has been entered.

Response to Amendment

Applicant's Amendment filed March 22, 2007 has been fully considered and entered.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 15, 19 and 29-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Levin et al. (US 6,758,611).

Regarding claim 1; Levin et al. discloses an optical device (10) adapted to receive an optical fiber (14) having a core (15) through which optical signals propagate, the optical device (10) comprising:

- a housing (a ferrule, 20, as well as elements 25, 43, 47, 48 and 30 are all portions of the housing) having;

- an opening for receiving a terminal end of the optical fiber (14),
and
 - a port located on a portion of the housing substantially opposite to the opening for receiving a terminal end of the optical fiber (14) and substantially opposite to the ferrule (20),
 - wherein the base (30, 48) receives the ferrule (20);
- an optical component (35) having a first facet and a second facet, the second facet being substantially parallel to the first facet, the first facet of the optical component contacting the terminal end of the optical fiber (14) so that the optical signals are incident upon the first facet, while the second facet of the optical component is disposed from the terminal end a distance that enables the optical signals which are internally reflected within the optical component to be substantially prevented from entering the terminal end of the optical fiber (see column 4, lines 9-11); and
- a hollow mount (36) configured to position the optical component (35) within at least a portion of the port, wherein a portion of the second facet of the optical component contacts the mount, and wherein the mount is configured to hold a portion of the first facet of the optical component against the housing (32; see column 3, lines 50-54);
- wherein the first optical component (35) has a diameter larger than the diameter of the optical fiber (14), and the first optical component (35) is

configured when the ferrule is placed inside the housing to abut the end of an optical fiber (14) placed inside the ferrule (20);

- wherein the mount (36) includes a post/protrusion (the post holds lens, 39), the post/protrusion extending into the ferrule (20), and the optical component (35) being supported by the post.

Regarding claim 2; the first facet is normal to the axis of the terminal end of the fiber (14).

Regarding claim 3; the optical component (35) may be glass (see column 4, lines 12-15).

Regarding claims 4 and 5; the invention further comprises an optoelectronic package (laser, 45) disposed within the port.

Regarding claim 15; the optical component has an axis that is perpendicular to a facet formed at the terminal end of the optical fiber (14).

Regarding claim 19; the mount (36) includes a lip disposed about the periphery of the mount and one or more members extending from the periphery of the mount.

Regarding claim 29; Levin et al. discloses an optical device comprising:

- a housing (a ferrule, 20, as well as elements 25, 43, 47, 48 and 30 are all portions of the housing) that includes a nosepiece (20) configured to receive a terminal end of an optical fiber (14), the housing defining a port;
- an optical component (35) having a first facet and a second facet that are substantially parallel to each other, the first facet of the optical

component being arranged for contact with the terminal end of the optical fiber (see column 4, lines 8-10) when the optical fiber (14) is received in the nosepiece (20); and

- a hollow mount (36) that contacts the second facet of the optical component so as to facilitate positioning of the optical component within the housing (see column 4, lines 5-7).

Regarding claim 30; a second optical component (lens, 39, window, 50, or laser, 45) is positioned within the port.

Regarding claim 31; the second optical component comprise an optical sub-assembly (the laser sub-assembly).

Regarding claims 32 and 33; the base comprise a region located between the second optical component that includes open space that is either air or a vacuum and which has a refractive index lower than a refractive index of the first optical component (35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levin et al. (US 6,758,611).

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Regarding claim 14; a laser transmitter (45; a laser and mount for the laser, etc., form a transmitter optical sub-assembly) generates electromagnetic radiation carrying optical signals and a lens (39) in optical communication with the laser transmitter focuses the radiation upon the terminal end of the optical fiber (14). Levin et al. does not explicitly state that the optoelectronic package disposed within the port includes a lens therein, however, transmitter or laser sub-assemblies often includes lenses within the sub-assembly to better focus or collimate light depending on the desired application and one of ordinary skill in the art would have found it obvious to use an optoelectronic package laser transmitter sub-assembly in the invention of Levin et al. that includes a lens to focus or collimate the light as needed to achieve the desired transmission results, as this is very elementary in the art.

Regarding claims 16 and 17; one of ordinary skill in the art would have found it obvious to have the optical component (35) have a thickness of less than about 2 mm or less than about 1 mm in order to achieve a desired coupling efficiency between the optical fiber and the laser in the invention of Levin et al., since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233), and that discovering an optimum value of a result effective variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)).

Response to Arguments

Applicant's arguments filed March 22, 2007 have been fully considered but they are not persuasive.

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Applicant states that claims 1 and 29 recite a "hollow mount" and that the Examiner has not established that Levin teaches or suggests a hollow mount. Levin et al. teaches that mount 36 is preferably formed of plastic and molded to simplify manufacturing (see column 3, lines 54-57). It is clear from Figure 2 that the mount, 36, is a unitary piece and contains a hollow region on the side of the optical fiber, 14, and a hollow region on the side of the laser (45). The presence of the hollow regions would naturally occur during molding processes that form the lens, 39, integrally with the mount, as shown in Figure 2. Levin et al. discloses that the lens is integrally formed with the mount, 36 (see column 4, lines 1-3). Furthermore, Levin discloses that the lens assembly is press fit into the base to be frictionally held in place (see column 4, lines 3-9). The hollow region with the lens assembly, 36, allows the flexibility necessary for the frictional fit to be achieved without the application of undue force that could deform or damage the mount. Levin et al. discloses the hollow mount (lens assembly, 36) in Figure 2.

The rejections to claim 20 and its dependent claims have been withdrawn in view of Applicant's Amendment and for the reasons indicated below.

Allowable Subject Matter

Claims 20, 22, 23 and 26-27 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art references of record either alone or in combination do not disclose or suggest an optical device, as defined in claim 20, comprising a ferrule configured to mate with the base such that the protrusion extends into the ferrule when the ferrule is

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mated with the base and an optical component supported by the protrusion, the first facet of the optical component being arranged for contact with a terminal end of an optical fiber when the optical fiber is positioned in the ferrule and the ferrule is mated with the base in combination with the other limitations of the claims. Claims 22, 23 and 26-27 depend from claim 20.

Conclusion

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.


Michelle R. Connelly-Cushwa
Patent Examiner
April 20, 2007